

Abstract

An oil recovery process is disclosed which uses an alkali(s) and a particular class of alkylaryl sulfonate surfactants. The surfactants are derived from an alpha-olefin stream having a broad distribution of even carbon numbers ranging from 12 to 28 or more. The
5 olefin stream is reacted with aromatic feedstock, such as benzene, toluene, xylene, ethylbenzene, or a mixture thereof to form alkylates, and then reacted with SO₃ to form sulfonic acids. Alternatively, the surfactant can be formed by first reacting an alpha-olefin stream having a broad distribution of carbon numbers ranging from 12 to 28 or more with SO₃ to form the olefin sulfonic acid that is subsequently used to alkylate an
10 aromatic feedstock. The use of alkali(s) and broad distribution alpha-olefins sulfonate based surfactant has the improvements of requiring ultra-low surfactant concentrations and providing ultra-low interfacial tensions over a wide range of alkali concentrations with crude oils, especially waxy crude oil, having a broad distribution of carbon numbers.